REMARKS

I. STATUS OF THE CLAIMS

Claims 1-20 are currently pending.

II. REJECTION OF CLAIMS UNDER 35 USC 112, FIRST PARAGRAPH

In the Amendment filed March 30, 2006, various claims were amended to recite that the collimated beam is not a spectral beam. The Examiner asserts that this recitation represents new matter.

The cited reference Fukushima (US Patent No. 5,805,759) defines a spectral beam as a beam in which wavelength components are separated spatially in a direction of thickness of the spectral beam. See, for example, column 5, lines 13-17, of Fukushima. As shown, for example, in FIG. 4 of Fukushima, diffraction gratings 20 and 22 are used to create a spectral beam in which wavelength components are separated spatially in a direction of thickness of the spectral beam.

Moreover, Fukushima clearly distinguishes between a spectral beam and a collimated beam. For example, column 7, lines 21-29, of Fukushima, indicates that the spectral beam SP is diffracted by gratings 24 and 26 to be a collimated beam, and no longer be a spectral beam.

Column 6, lines 43-45, of Fukushima, also distinguishes between a spectral beam and a collimated beam, but indicates that a spectral beam can be collimated if grating constants are set in an appropriate manner and collimating lens are properly aligned.

Therefore, spectral beams and collimated beams are well-known types of beams, as disclosed in Fukushima.

As indicated above, various claims were previously amended to recite that the collimated beam is not a spectral beam. For example, FIG. 1 shows a collimating lens 102a collimating the light into a collimated beam 110a. Various other figures, such as FIGS. 3, 6A, 6B and 6C, also show the use of a collimating lens to provide a collimated beam. It is respectfully submitted that a person of ordinary skill in the art would understand that the configurations in these figures, which use a collimated lens, would provide a collimated beam, but not a spectral beam.

Therefore, it is respectfully submitted that support for the previous amendments to the claims is found, for example, in FIG. 3, 6A, 6B and 6C, and the various portions of the specification such as, for example, page 5, lines 15-25, of the specification, which describe a collimating lens as collimating the light.

In view of the above, it is respectfully submitted that the rejection is overcome.

III. OBJECTION TO CLAIMS

The comments in Section II, above, with respect to the definition of a spectral beam, also apply here.

Claim 10 is amended to overcome the rejection.

In view of the above, it is respectfully submitted that the rejection is overcome.

IV. REJECTION OF CLAIMS 1-5, 7-9 AND 11-16 UNDER 35 USC 103 AS BEING UNPATENTABLE OVER FUKUSHIMA (US PATENT NO. 5,805,759)

Claim 1 recites that the collimated beam is not a spectral beam.

Fukushima defines a spectral beam as a beam in which wavelength components are separated spatially in a direction of thickness of the spectral beam. See, for example, column 5, lines 13-17, of Fukushima. As shown, for example, in FIG. 4 of Fukushima, diffraction gratings 20 and 22 are used to create a spectral beam in which wavelength components are separated spatially in a direction of thickness of the spectral beam.

Moreover, Fukushima clearly distinguishes between a spectral beam and a collimated beam. For example, column 7, lines 21-29, of Fukushima, indicates that the spectral beam SP is diffracted by gratings 24 and 26 to be a collimated beam, and no longer be a spectral beam.

Column 6, lines 43-45, of Fukushima, also distinguishes between a spectral beam and a collimated beam, but indicates that a spectral beam can be collimated if grating constants are set in an appropriate manner and collimating lens are properly aligned.

Therefore, spectral beams and collimated beams are well-known types of beams, as disclosed in Fukushima.

Moreover, in Fukushima, the light must be a spectral beam. See, for example, spectral beam SP in FIG. 1 of Fukushima, and the corresponding disclosure on column 6, lines 24-44, of Fukushima. The device of Fukushima uses a beam expander 2 to convert input light into the spectral beam SP and a beam condenser 4 to convert the spectral beam SP into an output light. See, for example, column 5, lines 24-39, of Fukushima.

Therefore, Fukushima requires that the light be a spectral beam. The device of Fukushima will not operate properly unless the light is a spectral beam. Therefore, it would be improper to modify Fukushima to provide a non-spectral beam.

Claim 1 specifically recites that the collimated beam is not a spectral beam. Therefore, it is respectfully submitted that claim 1 is patentable over Fukushima.

In accordance with the above comments, please note that claim 1 is further amended herein to recite that the collimated beam is not a spectral beam *of which wavelength*

components are spatially separated. Similar amendments are made to claims 11, 12 and 13.

The above comments are specifically directed to claim 1. However, it is respectfully submitted that the comments would be helpful in understanding differences of various other claims over the cited reference.

* * *

Claim 17 recites that the first and second filter portions each have a same, non-zero transmittance versus wavelength characteristic over wavelengths in the collimated light. See also claims 18-20. See, for example, FIG. 2, and the disclosure on page 6, lines 3-5; page 6, lines 22-23; and column 18, lines 12-17, of the present application.

FIG. 7(C) of Fukushima discloses an attenuator plate 6D. The transmittance versus wavelength characteristics of attenuator plate 6D are shown in FIG. 7(D) of Fukushima. As can be seen in FIG. 7(D) of Fukushima, the portions adjacent to slit 42 have zero transmittance for wavelengths in the light. Therefore, the attenuator plate 6D in Fukushima is significantly different that that recited, for example, in claims 17-20.

In the Office Action, the Examiner rejects claims 17-20 by referring to FIGS. 7(A) and 7(B) of Fukushima. However, it is respectfully submitted that these figures are substantially opposite to what is recited in claims 17-20.

More specifically, FIG. 7(A) of Fukushima shows a blocking stripe 40 in the center of attenuator plate 6c. Therefore, in essence, the blocking stripe 40 is positioned between two transparent areas. This is substantially opposite that recited, for example, in claim 17 (which is dependent from claim 1), where the diffraction unit is *between* the first and second filter portions.

Please note that claim 20 is dependent from claim 13, which specifically recites a slit between the first and second film portions. The arrangement in FIGS. 7(A) and 7(B) of Fukushima is substantially opposite the recitation in claim 20.

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In view of the above, it is respectfully submitted that the rejection is overcome.

V. REJECTION OF CLAIMS 1-6 AND 10-14 UNDER 35 USC 103 AS BEING UNPATENTABLE OVER LUO (US 2004/0005115)

Claim 1 recites a wavelength characteristic variable filter comprising (a) a filter that is arranged in a path of a collimated beam and having a diffraction unit that is movable in a direction substantially perpendicular to a direction of the collimated beam, wherein the filter has first and second filter portions with the diffraction unit between the first and second filter portions, and the collimated beam hits the first and second filter portions and the diffraction unit so that

the filter provides a transmittance versus wavelength characteristic in which transmittance of the filter changes with wavelength; and (b) a moving unit that moves the diffraction unit to thereby change the transmittance versus wavelength characteristic of the filter, wherein the collimated beam is not a spectral beam.

See, for example, FIGS. 1 and 2, and the corresponding disclosure on page 5, line 3, through page 7, line 21, of the specification.

Luo discloses bandpass filters with a space in between. For example, FIG. 3 of Luo discloses bandpass filters 380 and 390 with a space in between. However, light does not hit the space. For example, in FIG. 3 of Luo, the arrow from lens 430(f) refers to the light passing through lens 430(f). It can be seen in FIG. 3 of Luo that this light only hits and reflects off the various bandpass filters, and does not pass through the spaces between the bandpass filters. See also the various other arrows, representing other lights, in FIG. 3 of Luo.

This operation is significantly different than that recited, for example, in claim 1,where the collimated beam hits the first and second filter portions *and the diffraction unit* so that the filter provides a transmittance versus wavelength characteristic in which transmittance of the filter changes with wavelength.

Moreover, claim 1 recites a moving unit that moves the diffraction unit to thereby change the transmittance versus wavelength characteristic of the filter. Luo does not disclose or suggest this feature.

In the Office Action, the Examiner concedes that Luo does not explicitly teach a moving unit. However, the Examiner asserts that it would be obvious to modify Luo to include a moving unit. The Applicants respectfully disagree.

More specifically, FIG. 3 of Luo discloses an add/drop multiplexer into which a plurality of lights are input and a plurality of lights are output. The add/drop multiplexer must remain stable, or the entire alignment of the various lights/filters/lenses will be disturbed and the device will not work properly. For example, FIG. 3 of Luo discloses a large, single optical block 310 onto which all the bandpass filters are adhesively coupled or deposited. See, for example, paragraph [0022] of Luo. Therefore, to move a single filter, the entire block 310 would have to be moved, which would undesirably change the alignment of all the other lights/filters/lenses. For example, to change the transmittance of bandpass filter 380, the entire block 310 would have to be moved, which would undesirably change the alignment of all the other lights/filters/lenses. Such movement would destroy the operation of the device in Luo.

Therefore, it is respectfully submitted that the overall operation and nature of the device in Luo is substantially different than that recited, for example, in claim 1.

The above comments are specifically directed to claim 1. However, it is respectfully submitted that the comments would be helpful in understanding differences of various other claims over the cited reference.

In view of the above, it is respectfully submitted that the rejection is overcome.

VI. CONCLUSION

In view of the above, it is respectfully submitted that the application is in condition for allowance, and a Notice of Allowance is earnestly solicited.

If any further fees are required in connection with the filing of this response, please charge such fees to our Deposit Account No. 19-3935.

Respectfully submitted,

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